



ATTORNEY DOCKET No.: 0079571-0110 (BU04-17 US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: J. Porco, *et al.* **Examiner:** To be assigned
Serial No.: 10/593,502 **Group Art Unit:** To be assigned
Filing Date: September 20, 2006
Title: Synthesis of Rocaglamide Natural Products via Photochemical Generation of Oxidopyrylium Species

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

TRANSMITTAL LETTER

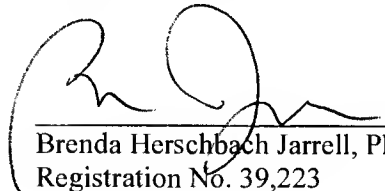
Enclosed are the following documents:

1. Form PTO-1449 (**4** pages);
2. Information Disclosure Statement (**6** pages);
3. Cited Art (**45**); and
4. Return Postcard.

If any additional fees are required to be paid or if any overpayment has been made, please charge same to Deposit Account No. 03-1721

Respectfully submitted,

Dated: May 22, 2007

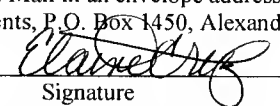

Brenda Herschbach Jarrell, Ph.D.
Registration No. 39,223

CHOATE, HALL & STEWART LLP
Patent Department
Two International Place
Boston, MA 02110
Tel: 617-248-5000
Fax: 617-248-4000

Certificate of Mailing

I certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

May 22, 2007
Date


Signature

Elaine Cruz

Typed or Printed Name of person signing certificate

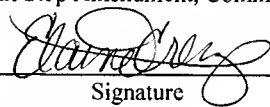


ATTORNEY DOCKET No.: 0079571-0110 (BU04-17 US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: J. Porco, *et al.* **Examiner:** To be assigned
Serial No.: 10/593,502 **Group Art Unit:** To be assigned
Filing Date: September 20, 2006
Title: Synthesis of Rocaglamide Natural Products via Photochemical Generation of Oxidopyrylium Species

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate of Mailing	
I certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
<u>May 22, 2007</u> Date	 Signature
_____ Elaine Cruz Typed or Printed Name of person signing certificate	

Sir:

**STATEMENT FILED PURSUANT TO THE
DUTY OF DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98**

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicant requests consideration of this Information Disclosure Statement.

Type of Statement

The present Information Disclosure Statement is:

- ☒ An ***original*** Information Disclosure Statement; or
☐ A ***supplemental*** Information Disclosure Statement.

Compliance with 37 CFR § 1.97

The present Information Disclosure Statement is being filed:

- ☒ Pursuant to 37 CFR § 1.97(b); no fee or certification is required:
- ☐ Within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d);
 - ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application;
 - ☒ Before the mailing of a first Office action on the merits; or
 - ☐ Before the mailing of a first Office action after the filing of a request for continued examination under § 1.114.
- ☐ Pursuant to 37 CFR § 1.97(c) after the dates listed above but before the mailing date of any of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application; Applicant hereby *either*:
- ☐ Certifies that *either*:
 - ☐ each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement; or
 - ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the

knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.; or

☐ Includes herewith the fee set forth in § 1.17(p).

☐ Pursuant to 37 CFR § 1.97(d), after the mailing date of any of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application; Applicant hereby *both*:

☐ Certifies that *either*:

☐ each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement; or

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.; and

Content of the Information Disclosure Statement

Applicant hereby makes of record in the above-identified application the reference(s) listed on the attached form PTO-1449 (modified). The order of presentation of the references should not be construed as an indication of the importance of the references.

Applicant includes copies of references as indicated below:

- ☒ [X] A copy of each cited reference not indicated with a * is included;
- ☐ [] Copies of references indicated with a † on the attached form PTO-1449 are not included pursuant to 37 CFR § 1.98(d) because they were previously provided/cited to the United States Patent Office in an Information Disclosure Statement that complies with 37 CFR § 1.98(a)-(c) and was submitted in the following patent application that is relied upon in the present case for an earlier effective filing date under 35 USC § 120:
- ☐ [] Copies of English translations of one or more non-English references are included.

Applicant hereby makes the following additional information of record in the above-identified application:

Applicant certifies that the Information Disclosure Statement *either*:

- ☒ [X] Does not contain non-English language citations;
- ☐ [] Does contain non-English language citations, of which an English language translation of the Abstract for each is provided herein:
- ☐ [] Includes one or more translations of a non-English citation.

Remarks

The submission of this Information Disclosure Statement should not be construed as a representation that a search has been made.

The submission of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in § 1.56(b) .

The submission of this Information Disclosure Statement shall not be construed as a representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

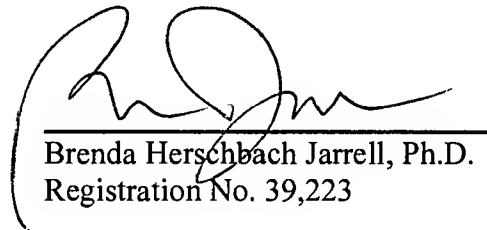
It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
2. The enclosed form PTO-1449 be signed by the Examiner to evidence that the cited patent(s) and publication(s) has (have) been fully considered by the Patent and Trademark Office during the examination of this application; and
3. The citations for the patent(s) and publication(s) be printed on any patent which issues from this application.

Notwithstanding any statements by Applicants, the Examiner is urged to form his or her own conclusions regarding the relevance of the cited reference(s).

Respectfully submitted,

Dated: May 22, 2007



Brenda Herschbach Jarrell, Ph.D.
Registration No. 39,223

CHOATE, HALL & STEWART, LLP
PATENT GROUP
Two International Place
Boston, MA 02110

Tel: 617-248-5000
Fax: 617-248-4000

Form PTO-1449 (REV. 8-83)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket 0079571-0110		In re Application No. 10/593,502	
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)				Applicant: Porco, <i>et al.</i>			
				Filing Date: September 20, 2006		Group: NYA	
U.S. PATENT DOCUMENTS							
Examiner's Initials	U.S. Patent No.	Applicant	Issue Date	Class	Subclass		
U.S. PATENT APPLICATIONS							
Examiner's Initials:	Serial Number:	Applicant:	Filing Date:	Group:	Art Unit:		
FOREIGN PATENT DOCUMENTS							
Examiner's Initials	Document No.	Country	International Publication Date	Translation			
				Yes	No		
OTHER DOCUMENTS							
Examiner's Initials	Citation (Including Author, Title, Date, Pertinent Pages, Etc.)						
N.C./	Bacher <i>et al.</i> , "Thapsakins: possible biogenetic intermediates towards insecticidal cyclopenta[b]benzofurans from <i>Aglaia edulis</i> ", <i>Phytochemistry</i> , 1999 , 52: 253-263						
	Bader <i>et al.</i> , "Proton transfer in 3-hydroxylavone studied by high-resolution 10 K laser-excited Shpol'skii spectroscopy", <i>J. Phys. Chem. A</i> , 2002 , 106: 2844-2849						
	Baer, "Oxidative Cleavage of α -Keto Acids and α -Keto Alcohols by Means of Lead Tetraacetate", <i>J. Chem. Soc.</i> , 1940 , 62: 1597-1606						
	Baldwin <i>et al.</i> , "Expedient synthesis of a highly substituted tropolone via a 3-oxidopyrylium [5+2] cycloaddition reaction", <i>Tetrahedron Lett.</i> , 2003 ; 44: 4543-4545						
	Baumann <i>et al.</i> , "Inducible Expression and Phosphorylation of Coactivator BOB.1/OBF.1 in T Cells", <i>J. Biol. Chem.</i> , 2002 , 277: 44791-44800						
	Bohnenstengel <i>et al.</i> , "Structure activity relationships of antiproliferative rocaglamide derivatives from <i>Aglaia</i> species (Meliaceae)", <i>Z. Naturforsch. [C]</i> , 1999 , 54: 55-60						
	Bohnenstengel <i>et al.</i> , "1H-cyclopenta[b]benzofuran lignans from <i>Aglaia</i> species inhibit cell proliferation and alter cell cycle distribution in human monocytic leukemia cell lines", <i>Z. Naturforsch. [C]</i> , 1999 , 54: 1075-1083						
	Chou, "The host/guest type of excited-state proton transfer: a general review", <i>J. Chin. Chem. Soc.</i> , 2001, 48: 651-682						
	Cui <i>et al.</i> , "Novel Cytotoxic 1H-Cyclopenta[b]Benzofuran Lignans from <i>Aglaia Elliptica</i> ", <i>Tetrahedron</i> , 1997 , 53: 17625-17632						
N.C./	Crout and Rathbone, "Catalysis Di-n-butyltin Oxide of a Tertiary Ketol Rearrangement:						

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Applicant:

Porco, *et al.*

Filing Date:

September 20, 2006

Group:

NYA

N.C./	Synthesis of Intermediates and Analogues of Valine and Isoleucine Biosynthesis", <i>J. Chem. Soc. Chem. Commun.</i> , 1987 , 290-291
	Creary <i>et al.</i> , "Diels-Alder approach to bicyclic .alpha.-hydroxy ketones. Facile ketol rearrangements of strained .alpha.-hydroxy ketones", <i>J. Org. Chem.</i> , 1985 , 50: 1932-1938
	Dumontet <i>et al.</i> , "New nitrogenous and aromatic derivatives from <i>Aglaia argentwa</i> and <i>A. forbesii</i> ", <i>Tetrahedron</i> , 1996 , 52: 6931-6942
	Fahrig <i>et al.</i> , "A Synthetic Derivative of the Natural Product Rocaglaol Is a Potent Inhibitor of Cytokine-Mediated Signaling and Shows Neuroprotective Activity in Vitro and in Animal Models of Parkinson's Disease and Traumatic Brain Injury", <i>Mol. Pharmacol.</i> , 2005 , 67: 1544-1555.
	Gerard <i>et al.</i> , "A Biomimetic Approach to the Rocaglamides Employing Photogeneration of Oxidopyryliums Derived from 3-Hydroxyflavones", <i>J. Am. Chem. Soc.</i> , 2004 , 126: 13620-13621
	Hailes <i>et al.</i> , "A biomimetic approach to the synthesis of rocaglamide based on a photochemical [2+2] cycloaddition of a cinnamate unit to a flavone", <i>Tetrahedron Lett.</i> , 1993 , 34: 5313-5316
	Hausott <i>et al.</i> , "Flavaglines: A group of efficient growth inhibitors block cell cycle progression and induce apoptosis in colorectal cancer cells", <i>Int. J. Cancer</i> , 2004 , 109: 933-940
	Hendrickson and Farina, "A new 7-ring cycloaddition reaction", <i>J. Org. Chem.</i> , 1980 , 45: 3359-3361
	Hwang <i>et al.</i> , "Silvestrol and Episilvestrol, Potential Anticancer Rocaglate Derivatives from <i>Aglaia silvestris</i> ", <i>J. Org. Chem.</i> , 2004 , 69: 3350-3358
	Itoh, "Fluorescence studies of the excited-state proton transfer in substituted 3-hydroxychromones in supersonic jet", <i>Pure and Applied Chemistry</i> , 1993 , 65: 1629-1634
	Ishibashi <i>et al.</i> , "Insecticidal 1H-Cyclopentatetrahydro[b]Benzofurans from <i>Aglaia Odorata</i> ", <i>Phytochemistry</i> , 1993 , 32: 307-310
	Kasha, "Proton-transfer spectroscopy. Perturbation of the tautomerization potential", <i>J. Chem. Soc. Faraday Trans. 2</i> , 1986 , 82: 2379-2392
	King <i>et al.</i> , "X-Ray Crystal Structure of Rocaglamide, a Novel Antileukemic 1H-Cyclopenta[b]benzofuran from <i>Aglaia elliptifolia</i> ", <i>J. Chem. Soc., Chem. Commun.</i> , 1982 , 1150-1151
	Klymchenko <i>et al.</i> , "3-Hydroxychromone dyes exhibiting excited-state intramolecular proton transfer in water with efficient two-band fluorescence", <i>New J. Chem.</i> , 2004 , 28: 687-692
	Klymchenko, "Elimination of hydrogen bonding effect on solvatochromism of 3-hydroxyflavones", <i>J. Phys. Chem. A</i> , 2003 , 107: 4211-4216
	Kraus and Sy, "A synthetic approach to rocaglamide via reductive cyclization of .delta.-keto nitriles", <i>J. Org. Chem.</i> , 1989 , 54: 77-83
N.C./	Kumar <i>et al.</i> , "Intramolecular excited-state proton-transfer studies on flavones in different environments", <i>Spectrochim. Acta, Part A</i> , 2001 , 57: 299-308

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Applicant:
Porco, *et al.*Filing Date:
September 20, 2006Group:
NYA

/N.C./	Laermer <i>et al.</i> , "Femtosecond spectroscopy of excited-state proton transfer in 2-(2'-hydroxyphenyl)benzothiazole", <i>Chem. Phys. Lett.</i> , 1988 , 148: 119-124
	Lee <i>et al.</i> , "Cytostatic mechanism and antitumor potential of novel 1H-cyclopenta[b]benzofuran lignans isolated from <i>Aglaia elliptica</i> ", <i>Chem. Biol. Interact.</i> , 1998 , 115: 215-228
	Lee and Wu, "Total Synthesis of Kaempferol and Methylated Kaempferol Derivatives", <i>J. Chin. Chem. Soc.</i> , 2001, 48: 201-206
	Lui <i>et al.</i> , "A general protocol for the hydroxylation of C-14 in gibberellins: synthesis of 14 β -hydroxy-GA ₁ methyl ester", <i>Tetrahedron</i> , 1998 , 54: 11637-11650
	Mandal <i>et al.</i> , "Evidence of ground-state proton-transfer reaction of 3-hydroxyflavone in neutral alcoholic solvents", <i>J. Phys. Chem. A</i> , 2003; 107: 6334-6339
	Matsuura and Takemo, "Photoinduced reactions. 61. Photorearrangement of 3-hydroxyflavones to 3-aryl-3-hydroxy-1,2-indandiones", <i>Tetrahedron</i> , 1973 , 3337-3340
	Ohse <i>et al.</i> , "Cyclopentabenzofuran Lignan Protein Synthesis Inhibitors from <i>Aglaia odorata</i> ", <i>J. Nat. Prod.</i> , 1996 , 650-652
	Paquette and Hofferberth, "Effect of 9,10-cyclic acetal stereochemistry on feasible operation of the alpha-ketol rearrangement in highly functionalized paclitaxel (Taxol) precursors", <i>J. Org. Chem.</i> , 2003 , 68: 2266-2275
	Proksch <i>et al.</i> , "Chemistry and biological activity of rocaglamide derivatives and related compounds in <i>Aglaia</i> species (Meliaceae)", <i>Curr. Org. Chem.</i> , 2001 , 5: 923-938
	Piers <i>et al.</i> , "Sequential anionic 1,3-ester shifts and intramolecular stille couplings: a new protocol for the concise assembly of functionalized polycyclic dienes", <i>Synlett.</i> , 1999 , 7: 1082-1084
	Roschal <i>et al.</i> , "Flavonols and Crown-Flavonols as Metal Cation Chelators. The Different Nature of Ba ²⁺ and Mg ²⁺ Complexes", <i>J. Phys. Chem. A</i> , 1998, 102: 5907-5914
	Sammes <i>et al.</i> , "The preparation and some reactions of 3-oxidopyrylium", <i>J. Chem. Soc. Perkin Trans. I</i> , 1983 , 1261-1265
	Schwartz <i>et al.</i> , "Direct observation of fast proton transfer: femtosecond photophysics of 3-hydroxyflavone", <i>J. Phys. Chem.</i> , 1992 , 96: 3591-3598
	Shipman <i>et al.</i> , "Synthesis of 1,3,2-dioxathiolane-4-methylene-2-oxides: Potential allene oxide equivalents", <i>Tetrahedron</i> , 1999 , 55: 10845-10850
	Tamaki <i>et al.</i> , "Syntheses of (-)-(7S)- and (+)-(7R)-K252a dimers", <i>Tetrahedron Lett.</i> , 2002 , 43: 379-382
	Tanaka <i>et al.</i> , "Synthesis of flavonol derivatives as probes of biological processes", <i>Tetrahedron Lett.</i> , 2000 , 41: 9735-9739
	Trost <i>et al.</i> , "An unusual oxidative cyclization. A synthesis and absolute stereochemical assignment of (-)-rocaglamide", <i>J. Am. Chem. Soc.</i> , 1990 , 112: 9022-9024
/N.C./	Wender <i>et al.</i> , "The First Synthesis of a Daphnane Diterpene: The Enantiocontrolled Total

Form PTO-1449 (REV. 8-83)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket 0079571-0110	In re Application No. 10/593,502
INFORMATION DISCLOSURE STATEMENT <i>(Use several sheets if necessary)</i>				Applicant: Porco, <i>et al.</i>	
				Filing Date: September 20, 2006	Group: NYA
/N.C./	Synthesis of (+)-Resiniferatoxin", <i>J. Am. Chem. Soc.</i> , 1997 , 119: 12976-12977				
/N.C./	Wu <i>et al.</i> , "Cytotoxic and antiplatelet aggregation principles from <i>Aglaia elliptifolia</i> ", <i>J. Nat. Prod.</i> , 1997 , 60: 606-608				
EXAMINER /Nizal Chandrakumar/				DATE CONSIDERED 09/16/2009	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to t applicant.					